



DESCRIPTION AND APPLICATIONS

The Electro-Voice Model PA7 is a conservatively rated 7-1/2 watt reentrant paging projector designed to provide highest articulation and maximum reliability in low to medium power public address or paging applications. Its design incorporates many unique engineering advances, including use of a high-impact molded Implex housing which is virtually immune to weather, abuse, and deterioration. Unusually high efficiency is combined with smoothly rising response and low distortion for maximum speech intelligibility. A unique swivel bracket makes the PA7 ideal for heavy-duty mobile applications as well as fixed installations. In the event adjustment is required in horn position, only a single wing nut need be loosened for quick and easy repositioning.

The PA7 is completely weatherproof: the molded-in mesa tan color cannot rust, chip, fade, or peel.

Provisions are included for quick, convenient, installation of Model TR7 line-matching transformer. The result is an unusually attractive, integral projector and transformer ideal for use in constant-voltage systems.

SPECIFICATIONS

Frequency Response:	400 to 13,000 cps
Power Handling Capacity	
Program Material:	7-1/2 watts
Peak:	15 watts
Impedance:	8 ohms
	(45 ohms available as PA7-45)
Dispersion:	120°
Sound Pressure Level:	119 db at 4 feet, with
	7-1/2 watts input
EIA Sensitivity Rating:	60 db
Mounting:	Swivel bracket, adjustable
	for precise coverage control
Dimensions:	6-3/4" dia. x 6" deep
Net Weight:	2 lbs.

FEATURES

- Tailored response for maximum articulation
- Rugged, high-impact molded housing impervious to abuse and weather
- Unique swivel bracket permits convenient mounting on any surface
- Readily accepts accessory line transformers

INSTALLATION

Mounting base may be attached securely to any convenient surface. Horn is assembled to bracket base and wing nut is tightened when horn is in the desired position.

The PA7 should be carefully directed toward the area to be covered by sound. Be careful to avoid locating microphones generally in front of the loudspeaker, to reduce the possibility of feedback. When used indoors, sound should not be allowed to bounce off highly reflective walls into the microphone. Best sound coverage will be obtained within a 120° angle from the loudspeaker.

Because the PA7 is completely weatherproofed, it may be mounted outdoors at any angle without danger of damage from rain or snow.

WIRING

The PA7 has a nominal impedance of 8 ohms. When two or more units are connected in parallel, all the red leads should be connected to one side of the line and all the black leads should be connected to the opposite side to effect proper phasing. For series operation, the red lead of one unit should be connected to the black lead of the next and so on.

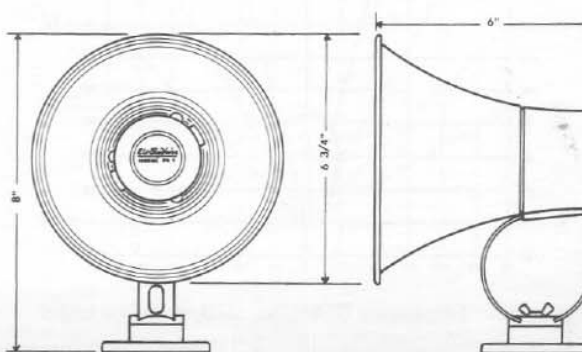


Figure 1 - Dimensional Drawing



CONSTANT LOUDNESS CONTOUR

Figure 2 indicates the distance from the PA7 at which a sound level of 90 decibels will be achieved when the driver is operated at half rated power (3-3/4 watts). Unlike the polar pattern the constant loudness graph is plotted in distance. The constant loudness contour is measured at 3000 cycles to assure that full articulation of speech is achieved anywhere on or inside the contour line. This does not mean that there will be no sound outside the constant loudness contour line, but merely that the loudness at 3 kc will be below 90 db and intelligibility may suffer.

Although a 90 db reference level has been selected, some other sound level may be required. The following table gives the conversion factor for several other levels. For sound level

of:	multiply distance by:
60 db	32.0
70 db	10.0
80 db	3.2

For sound level of:	divide distance by:
100 db	3.2
110 db	10.0
120 db	32.0

For sound pressure level of 90 db at full rated power multiply distance shown by 1.4

Two useful formulas can help you to use these charts and specifications.

1. Every time amplifier power into a driver is doubled, the sound pressure level at any point will be increased 3 decibels. Conversely, if amplifier power into the speaker is cut in half, (from 30 watts to 15 watts, for example) the sound pressure level will be reduced by 3 db.

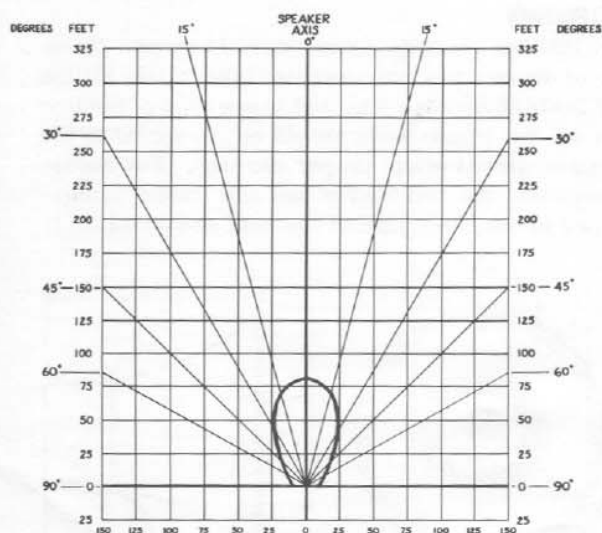


Figure 2 - Loudness Contour, 3-3/4 watts input

2. Every time the distance from the listener to the speaker is doubled, the sound pressure level at the listener will be reduced by 6 decibels. This is equivalent to having only 1/4 the amount of power available at the more distant position.

Note: The above statements refer to outdoor systems where no sound reinforcing reverberation affect the efficiency of the system. On indoor sound systems, reflections from walls will tend to reinforce the sound level thus reducing the effects noted above. The smaller the room, the less effect distance will have on loudness. Highly reflective wall surfaces (i.e. tile, glass, stone, etc.) will further reduce the loudness difference. These reflections however, may reduce intelligibility by creating a "garbled" or echo effect.

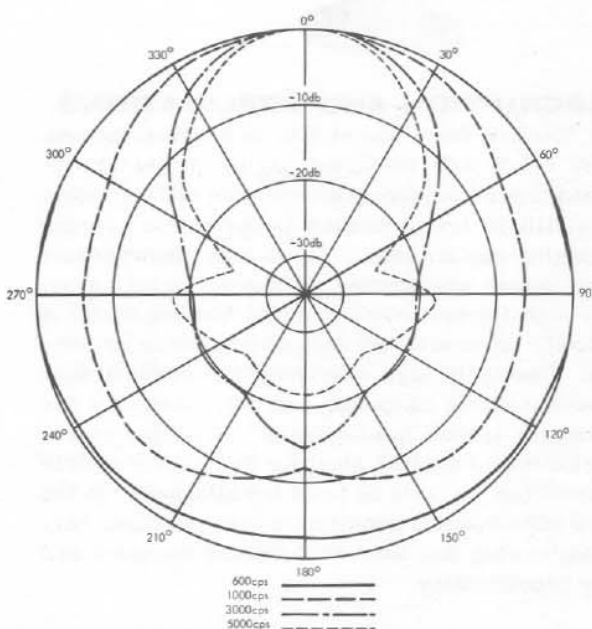


Figure 3 - Polar Response

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The paging projector shall be of high-impact Implex plastic. The sound pressure level at four feet on the axis with a signal of 2000 to 4000 cps at full rated power shall be 119 db. The power handling capacity shall be 7.5 watts. Nominal impedance shall be 8 ohms. Projector radiation pattern shall be 120° in vertical and horizontal planes.

The projector shall not exceed 6-3/4 inches diameter by 6 inches deep and shall weigh no more than 2 lbs. It shall employ a universal swivel mount permitting installation or maintenance without need for special tools. Position on the mount shall be adjustable after loosening one wing nut. Finish shall be mesa tan. Electro-Voice Model PA7 is specified.